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ABSTRACT

A major initiative in Australia is a general and pervasive obsession with competency-based training and assessment. There is a real danger that the selling of competency-based training (CBT) and competency-based assessment (CBA) is greater than what it can offer. One criticism focuses on CBT, the other on CBA, although in most instances where CBT is implemented these two issues could not be addressed independently. The first criticism derives from the assumption that CBT, done well, requires training and the the assessment of training in contexts as close as possible to actual on-the-job performance. This is incredibly expensive, yet implementing anything less in the name of CBT would be a severe limitation on CBT delivering what it claims it can. Because most businesses and industries cannot afford to implement CBT in this fashion, the money invested in developing and delivering CBT in whatever way they can could well end up being a waste of money. The second criticism is one that all forms of assessment should deal with but rarely, if ever, do. It focuses on the relationship between trainee knowledge and performance of skills at the time of assessment and some future time and different place where the same knowledge and skills would be required. CBA says nothing about whether trainees will perform to required standards under conditions other than training ones. (Contains 10 references.) (YLB)

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# Competency-Based Training & Competency-Based Assessment: "Out of the frying pan and into....?"

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## Preamble

I returned to Australia after working and studying in the US for the five years between 1988 and 1993. One of the major initiatives here is quite a general and pervasive obsession with Competency-Based Training and Assessment. The National government is firmly behind these initiatives, having introduced them and then providing continued and concomitant support in terms of national standards for training, qualifications and skills. Popular buzz words are outcomes, learning outcomes, articulation, competencies, competency and multiskilling. This paper was written for an audience of industrial training officers who for the most part, had no or few formal qualifications. They had some great ideas though, including their own criticisms of these same initiatives.

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## Introduction

At the end of a recent VETEC workshop held in Rockhampton I was asked in what ways could the status of workplace trainers and training be raised. In this paper I will suggest that one way of achieving this is by workplace trainers being better equipped and more willing to critically respond to criticisms of training that often signify its present status.

One such criticism, and one that seems constant and recurring, is that training is different and distinct in important ways from education. Here is a claim from the Australian Vice-Chancellors Committee (AVCC), a body representing universities in Australia, that reflects the attitudes that underpin the differences and distinction:

> To characterise these broad educational purposes and goals of higher education wholly in terms of 'competence' is to risk serious misunderstandings ...because of the profound difficulty of evaluating generic skills and 'meta-competencies', such as the higher order thinking skills, in competency-based terms (Beazley, 1988, p.65).

These comments suggest there is an important distinction between education and training based on differences on the competencies used in each area. As Beazley points out, what follows from the AVCC 's line of reasoning is that the AVCC believes that the NTB's Policy and Guidelines does not "...adequately distinguish training outcomes which can be characterised in terms of competencies, and education outcomes, most of which cannot be characterised in terms of competencies" (ibid).

One way to refute this distinction is to take what it is that explains the distinction itself and demonstrate that whatever it is that is claimed to be peculiar to education and not training is, in fact, common to both. Demonstrating that whatever it is that the distinction between education and training is built on is an integral part of both education and training must lead to the conclusion that there is no distinction at all.

This paper is an attempt at just that. In criticising CBT & CBA I will be arguing that workplace training and the work QTOS members are involved with is as replete with those 'meta-competencies', such as higher order thinking skills, that the AVCC believes are peculiar to education and not training. In criticizing CBT & CBA and suggesting that workplace trainers are capable of the same, I will be attacking that distinction which implies in an obvious way that if education is about "higher order" thinking skills, then training is about "lower order" thinking skills.

Hence, my response to the question of how the status of workplace trainers and training can be raised will be that workplace trainers themselves can make an important contribution by examining their own work in a more critical light. I believe that workplace trainers are as capable as anyone of addressing the claimed distinction between education and training and whether it is a fundamental and important

one or not. This will require, however, that workplace trainers become more aware of and demonstrate publicly how rich and complex their work is. And just as important, taking account of, and pride in, the imaginative and creative responses they provide in response to the complexities of their work. I offer a criticism of CBT & CBA as a contribution to this process.

**Criticism 1. CBT: Is it worth it?**

When Bougainville Copper Ltd., Papua New Guinea, was operating one of the major initiatives that the company's Mine Training College embarked on was to re-write most trade apprenticeship courses in self-paced, competency-based terms. CBT was attractive for many reasons, not least of which was that it allowed for "...acquiring minimum competencies, regardless of time..." (Hall, G.E. & Jones, H.L., 1976). Instead of apprentices in any trade not becoming tradespersons until they had "served their time" no matter how good or bad they were (which not only sounds like a prison sentence, but is perceived that way by many tradespersons and apprentices), CBT, in cases such as this, allows for progression through training based on whether individuals can carry out the required tasks necessary to being a tradesperson in a specific trade.

This is a very attractive proposition to many people as they frequently believe they can perform what some particular job requires of them "on-the-job" though they also realize that they could never get that same job if it required investing valuable amounts of time, money and energy in programs offered by universities, TAFE colleges, etc. The idea that CBT could provide for career preparation, progression or change and professional development based on how one performed or carried out the actual work one was being trained/prepared for suggests to many that as long as they could "do" the job then time for families, fun and fishing would remain.

CBT is also attractive for it is built on the assumption that education and training programs ought focus on the student's learning requirements. In response, one could argue, along with Hall & Jones again, that all good teaching and training has this tenet at its heart. In other words, no matter what method a teacher or trainer employs it is difficult to argue with their claim that "good instruction, regardless of the topic, still lies in structuring learning conditions for the learner, not the lesson" (p.8). Thus, whenever learners, whether in education or training, find themselves in the company of teachers or trainers who are more self-focused than learner-focused then it must be the case that they are in the company of bad teachers and incompetent trainers. And this would be so regardless of whether they were trying to learn under CBT, group processing, team-teaching, seminars, lectures or any other process.

Now CBT requires copious amounts of writing by those who design and develop the modules and/or learning packages that must support the relevant learning outcomes. This was no different for the team that had to write and re-write the apprenticeship programs and curriculum documents at BCL. And when you're working in an area that requires training employees for equipment and machinery that is very expensive; heavy equipment in the mining industry for instance, there is the not insignificant financial issue of what resources will be used to assess learner's competencies.

The cost of implementing CBT is of much greater concern than other methods of delivering and assessing training because CBT is fundamentally underpinned by a notion that trainees should be trained and assessed in a manner that is as close as possible to actual workplace performance. CBT, by definition, demands that assessment of learner competencies must involve each person actually performing the tasks and sub-tasks inherent to each pre-designed learning outcome. The literature on

CBT is replete with comments supporting this view.

Worsnop (1993), for instance, states, "...competency focuses on what is expected of an employee in the workplace rather than on the learning process..." (p.3, emphasis added). For those employees commonly referred to as "professionals", Gonczi, Hager & Oliver (1990) claim that "a] competent professional can be defined as a person who has the attributes necessary for job performance to the appropriate standard" (p.4, emphasis added). VETEC itself reminds us that it is personal competencies that are attained and not what happens in training when it informs us that competency-based training refers to "...an approach to vocational education and training which focuses on the competencies gained by an individual rather than on the training process itself" (no date, p.3 & 12, emphasis added). And both the NTB and the AVCC agree that "...competency concerns what people are able to do in given contexts..." (Beazley, 1988, p.63).

These latter comments by Beazley are crucial here. They highlight the fa ct that competencies are always assessed in given contexts. The ideal "given context" for the assessment of CBT is performance "on-the-job". Not in some training room, not on some "practice" equipment and not under training conditions. Yet experience with CBT informs us that rarely is this possible, for the obvious reasons of cost and logistics.

One BCL response to this issue was that whenever a machine broke down then whatever the fault was would indicate a range of possible learning outcomes that learners could work towards in the repair of this same machinery. The logistics of this approach are horrendous. Trainers have to have complex programs for each learner indicating what prerequisites students already possess in order to continue with subsequent training. They also have to coordinate with supervisory staff informing them of which workers are ready for the learning outcomes that can be associated with the broken-down machine. Then there are other problems associated with having the right parts and equipment on hand so the repair gets done in a reasonable amount of time and the workers/trainees don't end up forgetting where they were up to on the job, what they did with the parts and how they go back together.

Another BCL response was to train and assess each learner's performance on functional but out-of-date equipment that was continually used by those in training. All this required lots of prior hard work and sweet talk between training personal and production staff and management. I remember only too well how pleased we were when old machines were donated to the training college rather than being scrapped and how unique it was to get something that was fully operational. In the end though, machinery and equipment that is used continually for training leads to stripped threads, missing parts and eventually, inoperable machinery and equipment. There is nothing better at promoting pessimism and apathy towards training than being trained on equipment that ought to work but does not or hardware that is no longer used "on-the-job".

There are some enlightened companies that are willing to spend the money to make CBT work. A small chemical plant in NSW for instance has implemented close to an ideal version of CBT. The employees there are literally trained and assessed "on-the-job". The implementation of this program, however, has been the result of industrial relations negotiations from the onset. These negotiations have led to the allocation of time at work to complete each learning outcome, one-off cash bonuses for each level achieved and permanent pay raises for employees who complete the program.

Some of you here will have your own experiences of how you have implemented CBT while costs have limited your being able to train and assess "on-the-job" and I am keen to hear of how you have coped

with situations and what you learned from that experience.

In the end, we all know that it's dollars that drives our education/training activities. As Hall and Jones (1976) state, when the choice is between sophistication (which CBT has a considerable amount of) and economics, economics wins (p.357). And anyone with the briefest experience in education and/or training can attest to that fact.

It would seem to me then that some of the promises of CBT can only be fulfilled if more thought is given to what CBT demands in order for it to work. This will also require a willingness to invest a considerable amount of resources, human, material and financial. Implementing anything less may result in CBT not producing what its avid supporters claim it can.

A final comment on this section. Given my criticism and my interpretation of how CBT is meant to work, I find it ironic that the traditional apprenticeship system, when it works well, is also premised on training and the assessment of competencies being "on-the-job" though rarely do we think of the apprenticeship model in these terms. Apprenticeships are all about being trained, performing and being assessed for performance under actual working conditions and not hypothetical or simulated situations. Apprentices are given jobs appropriate to their skills and abilities and are assessed, sometimes in informal ways, to specific standards, eg, workshop manuals, specific time-lines, customer satisfaction, etc.

Apprenticeships have their shortcomings of course. If you are an apprentice it fails completely if you get a mean old bastard who wants to give up nothing. If you are a tradesperson it also fails if you get a mouthy teenager who wants to be given nothing - he or she knows it all. Yet if training and being assessed "on-the-job" is as important as CBT assumes, then perhaps getting better "fits" between apprentices or trainees and tradespeople might have been a more reasonable and cheaper approach.

**Criticism 2. CBA: A better crystal ball?**

The second issue I want to raise concerns why we assess trainees at all. One reason we assess, and a seemingly obvious one, is to see if they have learned what was intended they should learn. Another reason is to provide some indication of what trainees are capable of in the future and in contexts other than the training one. This second reason for assessment we can call the inferential predictability reason. In other words, the assessment methods, techniques, etc we employ can be used to help us determine what trainees are capable of in future circumstances.

Accepting this reason as a central one to why we assess, CBA, at a fundamental level, is no different than other methods of assessment. CBA is just one means among many of making inferences about the future performance of trainees. I will focus on a specific example to explain this point.

At the end of a training session on cake baking you want to find out if each trainee has achieved what was intended. If the aim of the training was for trainees to be able to bake a cake, then you want to know if each trainee can bake a cake. One way to determine this is to ask each trainee to describe or explain what is necessary to making some specific cake. A good description would include the ingredients required, what processes, in what order and perhaps some comments about possible problems and solutions to them.

Describing or explaining how to bake a cake as a means of assessing whether trainees can bake a cake

is not as silly as it initially may sound. Many people in this room have experiences of and with the traditional apprenticeship system. There experiences may well have included attending a TAFE college or its equivalent. In institutions like these, and due to all sorts of reasons, there was often a considerable amount of testing of the ability to perform certain skills with assessment methods that did not require the performing of those same skills.

For instance, in my experiences within TAFE it was not always possible t o provide the resources and time to allow twenty or more apprentices the opportunity to demonstrate they could strip an engine down and get it running again. What usually happened was that an engine was "shared" between a group of apprentices in that class, some got to practice and demonstrate particular skills while others looked on; out of boredom, lack of self-confidence, bad teaching, etc. In such circumstances it was not uncommon to ask students to describe, write a report or complete various check lists as a means of assessing whether they knew what to do if asked to overhau! an engine.

Now if this sounds like your training then let me ask you this: Are you not the tradesperson you could have been because of this training? Are you an "incompetent" tradesperson because you experienced this predominantly non-competency based method of assessment? One reason why you can confidently say "No" to these questions is because it was never intended that the specific assessment method you undertook under circumstances like these was meant to serve as an indicator of how you would perform in the future, how you would perform "on-the-job". The training, practice and assessment of skills necessary for the job was the responsibility of the employer. The assessment of whether you could perform "on-the-job" or not was between you and your employer. Thus, it would have made little difference in assessing your "off-the-job" training if you had to describe the skills, etc you had been trained for or you had to demonstrate or perform them.

Training "off-the-job" under the apprenticeship system which included attending a TAFE college or its equivalent was mostly about learning those general principles that were applicable in all sorts of settings. It was not about how to perform specific skills to given standards. It was more about learning that what made an engine work involved the same principles that made hydraulic systems work. Learning how those general principles translated into actual physical, "hands-on" tasks at work was deliberately intended to be a joint responsibility between the trainee and employer at the worksite.

Most people would probably believe that the best method of assessing whether a trainee can bake a cake or not is to get them to bake a cake, and I would agree with them My criticism of CBA here though is not whether CBA is a better method of assessing whether trainees can bake cakes at the end of the training. My concern here is the blind faith given to CBA that it is much better than other assessment methods of predicting whether trainees will bake cakes at all, and when they do, that they will be baked to those standards achieved in training.

The issue I am addressing here then is not which assessment method best confirms that each trainee can bake a cake, given the appropriate conditions. All kinds of methods can be employed to determine that. Gonczi, et al comment in their paper, "The Development of CBA Strategies for the Professions", that CBA "...is about making judgements based on evidence (p.1). The question I am raising here, and one I believe all workplace trainers should reflect on, is this: "What kind of evidence should we rely on to indicate that trainees will replicate on the job what it is that they achieved in training?" In other words, if training is one means of contributing to the aim of developing good workers, I am asking what is the best evidence trainers can rely on to infer that what they are doing will result in good workers?

In effect, supporters of CBA believe that getting someone to perform specific job-related tasks in training to required standards is the best evidence. I believe there are problems with this belief. To defend my scepticism and explain my disbelief I will focus on a specific example.

When I worked at Hastings Deering there was a policy there that safety glasses had to be worn at all times, as soon as one entered company property. Now there are obviously good reasons for requiring employees to wear safety glasses though the specific occasions when they should be worn is highly disputable. For instance, should they be worn while visiting the toilet? After all, the toilet is on company property too. Then there is the problem of being required to wear safety glasses in situations where it is not practically feasible, eg hanging upside down in the belly of a bulldozer on a hot day.

You can imagine the training that might have gone into requiring employees to wear safety glasses, but no matter what methods are used for the training and the assessment of that training, the most common and obvious reason for requiring safety glasses to be worn is to have safe work practices and safety conscious employees. The overarching aim is to get employees to be safety conscious workers and wear safety glasses of their own accord.

From experience and informal conversations with other trainers, however, safety and safe working practices are some of the most difficult (and often boring) areas of training. Employees often have a general apathy towards training and this seems especially so with safety training. As a result companies often have to employ punitive measures like enforcing days off for infringements of safety policies and practices.

In situations like these where trainees fail to perform to the standards they had achieved in training (and these situations are not peculiar to safety training) what we have is a "gap" between training workers to desired standards, their being successful in this and the continuation of working to these same standards in non-training settings. The reason for this gap has very little, perhaps even nothing, to do with whether CBT, CBA or any other method is used.

What accounts for this gap is the difference between 'can' and 'will', between "knowing how to" and "knowing to". In other words, and back to the baking-the-cake example, you can know how to bake a cake to given standards but whether you will bake a cake to these standards and continue to do so under different conditions and circumstances is another matter entirely. The move from knowing how to bake a cake to making a cake to the desired standards involves complex and difficult components that workplace training rarely addresses. Workers have to "want", to "desire", or "wish" to bake a cake and to bake it to those standards they achieved in training. Blank states that competencies describe exactly what the students will be able to do (1982, p.5). He ignores the fact that competent performance also necessarily requires being willing to perform ably.

Thus, when someone is taught to identify the right safety glasses to wear for particular circumstances, how to wear these same glasses and why they should be worn, there is a lot more at stake than learning the "what", the "how" and the "why" if the aim is to get employees to be safety conscious of their own accord. To achieve this aim each individual has to agree with why safety glasses should be worn and why it is good to be a safety-conscious worker.

This requires individual employees examining what reasons are given for being a safety conscious worker and whether these reasons are worth acting on. It requires people making value judgements at work.

Now value judgements at work - wanting to do one job rather than another , finding some jobs good and detesting others, preferring to work with Susan rather than Frank, using the ring spanner instead of the shifter - are decisions that are continuously made throughout the working day. Making judgements like these is something that we all do on a regular basis. The process itself is sometimes complex, sometimes straightforward. On some occasions such judgements are made rapidly while others are pondered over for hours, even days.

For instance, just imagine the complexity of the reasoning processes of the boilermaker who might be might be in an uncomfortable position trying to "tack" some plates together and has to make the judgement of whether to shout and wait for help or to carry on regardless, single handedly. Her decision is more difficult than it first appears because the closest person at hand is that pig who always gives her a hard time about her being a female boiler maker. On the other hand, her raised arm is increasingly becoming peppered with "pins and needles" and this may well affect the quality of the weld. This is not an inconsequential scenario. Tarr (1974) cites Horner's research "...that most women who are capable in their work will not perform as well as they are able to when they are placed in a competitive situation with men" (p.85).

Or what about the receptionist faced with an irate and rude customer who has to judge whether to be honest with her attitude towards the customer or sticking with the company "script" provided for such occasions. If she chooses the former there is the chance that the nearby supervisor will overhear and that might mean a day off which means one bill won't get paid that month. On the other hand she firmly believes that there is no occasion where people should be spoken to like dirt. This customer is really testing her principles. What to do, what to do?

Examples like these are not uncommon or unusual. Neither are they simple or trivial judgements that require little or no employment of complex and personal reasoning processes. Judgements like these require those faculties that distinguish us, in part, from animals. They are the same faculties that people use to design complex machinery, construct social policy or write critical papers for conferences. These faculties are to be found in most human beings though when and how they are used is as varied as the personalities that possess them.

My criticism here of CBA is that it is not clear to me how it addresses and answers this difficult area of workplace training and worker performance any better than any other assessment method. And this area is as critical to whether trainees will continue to "perform to standards" as assessing whether they have the skills to perform.

CBA, like most other forms of assessment, offers no guarantee workers will perform, in some other context, at some other time, what they have learnt to given standards in the training setting. CBA may well confirm that workers are able to perform given tasks, skills, etc to given standards but that's all it can confirm. CBA can not guarantee that workers will perform on the job to those same standards. "Competency assessment is not about measuring performance, but rather about making judgements of performance", Chappell writes (1992, p.15). Broudy points out that what CBA provides us with is not an assessment of performance but the promise of performance (1974, p.61). The issue I am raising is how do we justify the judgement that the assessment methods we use are the best indicators that promise (of competent performance) will be fulfilled?

CBA is no better than any other form of assessment when it comes to inferential predictability because most forms of assessment, and in our case assessment of worker knowledge, skills, etc as a result of training, completely ignores the normative aspects of being a worker. CBA may well give us a better idea of whether employees can perform to given standards but it says nothing about whether they will. And what must follow from this is that CBA, as described, does not necessarily result in better workers.

In the end, the most certain thing we can say about CBA is that it assesses what trainees can do under assessment conditions. This makes it no worse or better than other forms of assessment of course. The most we can say about written exams for instance is that they measure what people can write under exam conditions, Neither method can guarantee anything about future performance and the fundamental issue for all assessment is what kind of evidence will we accept as being the best indicator of future performance.

Concentrating on what evidence can be accepted as being the best indicator of future trainee performance to agreed on standards is an issue that workplace trainers would do well to give more critical thought to. This will require them being and letting others know how reflective, imaginative and creative they have to be in their work. It will also necessitate them coming to grips with issues like why we train at all and becoming more aware of the limitations and restrictions on the kind of trainers they can be and the training they can deliver.

In doing so, workplace trainers will be demonstrating that they possess and use those very intellectual capacities and skills that are so often believed to be the preserve of education and often claimed to play little or no part in training. And then that will be one reason less to maintain that divisive distinction between education and training, that distinction which bears considerably on the status of who we are and what we do.

## Conclusion

After Harry Broudy had presented his short paper "Why Oppose CBTE" in 1974, both Benjamin Rosner and Bill Drummond expressed the same point of view that "...we seem somehow to be plunging forward at a mad pace toward some rather unknown or some not too clear goals" (Rosner, B. 1979, p.69). These three people were working in the area of competency-based teacher education and expressing their views in a round table discussion at the American Association of Colleges for Teacher Education and the Society of Professors of Education held at The University of Houston in 1973.

On my return to Australia after ten years of being involved in education and training in the USA and Papua New Guinea, Rosner's and Drummond's comments aptly describe my reactions to the training scene here and particularly so with regard to the national push for, and almost obsession with, competency-based initiatives. Echoing Rosner again, my reaction was and still is that there is the real danger that the selling of CBT & CBA is greater than what it can offer (p.74). To expand on my reaction I have offered two specific criticisms. One focused on CBT, the other CBA though in most instances where CBT is implemented these two issues could not be addressed independently.

The first criticism derived from the assumption that CBT, done well, requires training and the assessment of training in contexts as close as possible to actual on-the-job performance. I have argued that this is incredibly expensive yet implementing anything less in the name of CBT will be a severe limitation on CBT delivering what it claims it can. Because most businesses and industries can not afford to implement CBT in this fashion then the money invested in developing and delivering CBT in

whatever way they can could may well end up being a waste of money.

The second criticism was one that all forms of assessment should deal with but rarely, if ever, do. It focused on the relationship between the trainee knowledge and performance of skills, capacities, etc present at the time of assessment and some future time and different place where this same knowledge, skills, etc would be required. CBA is premised on the belief that it will create better workers because it refocusses training on performance and competency in performance. This may well be so but that says nothing about whether trainees will perform to those required standards under conditions other than training ones.

I admitted that this is not a problem unique to workplace training. If one aim to teaching sex education in schools, for instance, is to reduce teenage pregnancy, then students knowing about various forms of contraception and knowing how to use these (to the required standards?) says nothing about whether they will use contraceptives to those required standards given the appropriate conditions. If people know how to tell the truth and can tell the truth this says nothing about whether they will tell the truth.

Workplace training and performing one's work involves individuals making value judgements as much as any other human activity. Deciding to continue to work "on-the-job" to the standards trained to is just one example. Countless numbers of philosophers, academics and educators have spent and continue to spend a considerable amount of energy and resources in trying to answer the problem that is fundamental to this and all value judgements - the problem of bridging that "gap" between "knowing how to" and "knowing to", between "being able" and "being willing".

If this is one problem that is central to the work of philosophers, academics and educators, then this must be a problem that requires the employment of those "meta-competencies" that are fundamental to education and not training that I introduced this paper with. I have argued that non-academic work, ie training, often requires the employment of these same "meta-competencies" and workplace trainers are as capable as anyone else of addressing problems that require the use of them.

Ignoring problems like the relationship between "being able" and "being willing" that are as crucial to workplace performance as the assessment of competencies runs the real risk of us becoming painfully aware that the heat we felt from the "frying pan" of the apprenticeship system or whatever training methods we used before CBT & CBA may have been more bearable than the burns we may yet get from CBT & CBA.

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